

Augustin Ernoult

Curriculum Vitae

Born the 15th May 1989 (34 years old)
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Positions

- Since 2020 **Researcher**, *project-team Makutu, Inria Bordeaux Sud-Ouest*, Bordeaux, France
- 2019 - 2020 **Postdoctoral fellow**, *projet-team Magique3D, Inria Bordeaux Sud-Ouest*, Bordeaux, France
- 2017 - 2019 **Postdoctoral fellow**, *Laboratory of Mechanics and Acoustics (LMA)*, Marseille, France, Joint laboratory Liamfi (LMA - Buffet Crampon)
- 2016 - 2017 **Teacher assistant (ATER)**, *LAM, Institut Jean le Rond d'Alembert, UPMC*, Paris, France
- 2013 - 2016 **Ph.D. Student**, *LAM, Institut Jean le Rond d'Alembert, UPMC*, Paris, France, Supervised by B. Fabre

Education

- 2017 **Qualification aux fonctions de Maître de Conférence**, *section CNU 60*
Academic certification necessary in France to apply to Assistant Professor positions in Mechanics, Mechanical engineering, etc.
- 5 Oct. 2016: **Ph.D. defense**, *Université Pierre et Marie Curie - Paris 6*
Speciality Acoustics
- 2013 **Agrégation**, Physics-Chemistry, speciality physics
High selective exam giving the possibility to be a teacher
- 2011 - 2012 **Master's degree**, *Université Paris 7 - Diderot*
Physic Acoustics, obtained with honours.
- 2009 - 2011 **Bachelor and first year of Master**, *École Normale Supérieure de Lyon*
Sciences de la matière (physics), Bachelor's degree obtained with honours.
- 2007 - 2009 **Classe préparatoire aux grandes écoles**, *Lycée Janson de Sailly, Paris*
A two-year intensive course preparing for the competitive entrance examinations to French Grandes Écoles with courses of Mathematics, Physics and Engineering Sciences

Research activities

Support to musical instruments amkers

Collaborations: J. Chabassier (Inria, Bordeaux), C. Fritz (LAM-d'Alembert, Paris), P. Guillemain (LMA, Marseille), A. Humeau (Humeau Factory), M. Jousserand (Buffet Crampon), S. Missoum (Arizona University, USA), D. Sharp (Open University, RU)

- relation between acoustic and musical characteristics
- automatic design: target definition, optimization algorithms [J3]
- bore reconstruction using the "Full Waveforme Inversion" [J2] or the "pulse reflectometry"
- software development: Optim-Z [L1], OpenWIND [L2]

Acoustics of wind instruments

Collaborations: J. Chabassier (Inria, Bordeaux), P. de la Cuadra (Santiago, Chili), B. Fabre (LAM-d'Alembert, Paris), T. Grothe (Detmold, Allemagne), J. Kergomard (LMA, Marseille)

- numerical solution of wave propagation in 1D
- measurement of acoustic impedance
- radiation of flute-like instruments [J5] [J9]
- thermo-viscous losses [J4] [R1]
- influence of the geometry on the radiated sound [J1]

Acoustic sources of flute-like instruments

Collaborations: P. de la Cuadra (Santiago, Chili), B. Fabre (LAM-d'Alembert, Paris), A. Hajczak (LAM-d'Alembert, Paris), P.Y. Lagrée (d'Alembert, Paris)

- flow visualization (schlieren technique)
- aero-acoustic model [J11]
- dynamic system analysis
- coupling with the vocal tract [J10]

Sound control in musical context

Collaborations: C. Balosso-Bardin (Lincoln University, RU), P. de la Cuadra (Santiago, Chili), B. Fabre (LAM-d'Alembert, Paris)

- "in vivo" measurement on musician in musical context [T1]
- "in vitro" measurement with artificial mouth [T1]
- characterization of attack transients of recorder [J8]
- acoustic and ethno-musicological study of the bag control of bagpipe [J6], [J7]

Research stays

- 2021 **ETI, Hochschule für Musik, Detmold**, Germany, Founding: DAAD
3 month stays to carry out an acoustic comparative study of the french and german bassoon (recording, measurements, simulations) with Timo Grothe.
- Feb. 2018 **Pontificia Universidad Católica de Chile, Santiago du Chili**, Founding: FONDECYT
2 weeks stay to work with Patricio de la Cuadra on the control and playability of quand (Andean flute).

Ph.D. supervision

- Since **C. Bastien**, 50% co-supervised with C. Fritz, Founds: ANR Own-Music.
- Nov.2023 Model the homogeneity of the control of wind instrument players: the case of flute-like instruments.

Student supervision

- 2023 **A. Autin (M2)**, 6 month, 100%
Bore reconstruction of wind instruments with acosutic reflectometry.
- 2023 **A. Fresneau (M2)**, 6 month, 100%
Prediction of sound production difficulty with reed instruments (acoustic and perceptual study).
- 2022 **C. Vernay (L2)**, 6 weeks, 100%
Characterization (bias, uncertainties) of impedance sensor.
- 2019-2020 **A. Thibault (M2)**, 12 month, 40% co-supervised with J. Chabassier
Model and temporal numerical simulation of wind instruments.
- 2019 **G. Castera (M1)**, 3 month, 30% co-supervised with J. Chabassier and R. Tournemenne
Adaptative meshing for simulation of wind instruments with 1D finite element method.
- 2018 **R. Buttard and B. de Frémont (IUT)**, 2x3 month, 30% co-supervised with Ph. Guillemain and T. Colinot
Measurement and simulation of impedance of wind instruments.
- 2015-2016 **A. Hajczack (M2)**, 6 month, 90% co-supervised with B. Fabre
Evolution of the spectral content of the sound during the attack transient of organ flute.
- 2015 **C. Huguet (M1)**, 3 month, 90% co-supervised with B. Fabre
Visualization and analysis of the jet during attack transients of an organ pipe.

Teaching activities

- 2016-2017 **Teacher assistant: 192h**, *Engineering faculty, UPMC*, Paris (Fr)
Acoustics (TD-TP, L1-M1, 48h), Mechanics (TD-TP, L1-L2-L3, 92h), Signal Processing (TD-TP, M1, 36h), Programming (TP, L2, 24h).¹
- 2013-2016 **Teaching charge during my Ph.D. preparation: 192h**, *Physic faculty, UPMC*, Paris (Fr)
Thermodynamic (TD, L1, 94h), Ondes (TD-TP, L2, 48h), Acoustic (TP, L3, 24h), Experimental sciences (32h) ¹

¹TD: Exercise class; TP: Practical class; L1-L2-L3: Bachelor level; M1-M2: Master Level

Distinctions and Funding

- 2023 **ANR-JCJC** funding (french National Research Agency) (PI), "Own-Music" project: *CustOm design of Woodwind iNstruments: optiMization of the geometry of flUtes, thanks to the modeling of the note-to-note adaptation of the muSicIAN's Control*
- 2019 **Yves Rocard award**, young researcher award from the French Society of Acoustics
- 2017 **Technical Area Pick** of the *Journal of the Acoustical Society of America* for the article [J7]: "Music in a bag? Controlling the bag of Majorcan and Galician bagpipes", JASA, 2017.
- 2017 **Best poster presentation awards** during the *International Symposium on Musical Acoustics 2017*, Montreal [C25].
- 2014 **Poster prize of innovative scientific research** during the *International Symposium on Musical Acoustics*, 2014, le Mans (FR) [C12].

Collective responsibilities

- Since 2019 Member of GSAM: the specialized group of musical acoustic of the French Society of Acoustics
- Since 2018 Reviewer for the "Musical Acoustics" section of the "Journal of the Acoustical Society of America"
- 2022 Reviewer and panel chair of a session during the French Congress of Acoustic in Marseille.
- 2014 - 2015 Elected representative of Ph.D. students in the "Institut d'Alembert" (Paris, Fr)

Musicale activities

- Since 2022 Traditional music (French and Klezmer)
- Since 2018 Learning clarinet
- 2017 - 2019 Member of the symphonic orchestra of Aix-Marseille university
- 2013 - 2017 Member of the symphonic orchestra "Coalescence" (Paris)
- 2007: Certificate of musical study in music theory and music analysis (Music academy of Val Maubuée (Fr))
- 2004–2009: Member of music band (compositions and arrangements): violin, cello, accordion and voices
- 1994 – Learn cello in music academy of Val Maubuée (Fr): music theory, individual practice, 2009: orchestral practice, chamber music

Languages

- English: Fluent (B2)
- German: Average level (B1)
- French: Mother tongue

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Scientific Publications

Born the 15th May 1989 (34 years old)
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The numeric version of the majority of the following publications are available on the web page:
<https://cv.archives-ouvertes.fr/augustin-ernoult>. For oral presentations, the speaker is underlined.

Ph.D. Thesis

- [T1] **A. Ernoult**, “*Régimes non-stationnaires dans les instruments à embouchure de type flûte*”, Ph.D. thesis, Université Pierre et Marie Curie, **5th Oct. 2016**, Paris, France

Journal articles

- [J1] **A. Ernoult** and T. Grothe “*Experimental study of the effect of the long chimney of a closed tonehole on the sound of a bassoon.*”, The Journal of the Acoustical Society of America **2023**, vol.153(2), p.1229–1240. [hal-03789436](#)
- [J2] **A. Ernoult** and J. Chabassier, S.Rodriguez, A. Humeau “*Full Waveform Inversion for Bore Reconstruction of Woodwind-like Instruments.*”, Acta Acustica, **2021**, vol.5(47), 15 pages. [hal-03231946](#)
- [J3] **A. Ernoult**, C. Vergez, S. Missoum, P. Guillemain and M. Jousserand, “*Woodwind Instrument Design Optimization Based on Impedance Characteristics with Geometric Constraints.*”, The Journal of the Acoustical Society of America; **2020**, vol.148 (5), p.2864–2877. [hal-02479433](#)
- [J4] **A. Ernoult** and J. Kergomard, “*Transfer Matrix of a Truncated Cone with Viscothermal Losses: Application of the WKB Method.*”, Acta Acustica **2020** vol.4(2). [hal-02428009](#)
- [J5] **A. Ernoult**, P. de la Cuadra, B. Fabre “*An inclined plane: a simple model for the acoustic influence of the flutist’s face*” Acta Acustica united with Acustica, **2018**, vol.104(3), p.496-508. [hal-01943166](#)
- [J6] C. Balosso-Bardin, **A. Ernoult**, P. de la Cuadra, B. Fabre, I. Franciosi “*The Secret of the Bagpipes: Controlling the Bag. Techniques, Skill and Musicality*” Galpin Society Journal, **Mars 2018**, vol.71. [art.es.uc.cl/images/The_Secret_of_the_Bagpipes.pdf](#)
- [J7] **A. Ernoult**, C. Balosso-Bardin, I.Franciosi, P. de la Cuadra, B. Fabre “*Music in a bag? Controlling the bag of Majorcan and Galician bagpipes*”, The Journal of the Acoustical Society of America, **2017**, vol.142(3), p.1454–1465. **Technical Area Pick, 2017** [hal-01613185](#)
- [J8] **A. Ernoult** and B. Fabre “*Temporal characterization of experimental recorder attack transients.*” The Journal of the Acoustical Society of America, **2017**, vol.141(1), p.383-394. [hal-01468377](#)
- [J9] **A. Ernoult** and B. Fabre “*Window impedance of recorder-like instruments.*” Acta Acustica united with Acustica, **2017**, vol.103(1), p.106-116. [hal-01430654](#)
- [J10] R. Auvray, **A. Ernoult**, S. Terrien, P.Y. Lagrée, B. Fabre, and C. Vergez, “*Effect of Changing the Vocal Tract Shape on the Sound Production of the Recorder: An Experimental and Theoretical Study.*” Acta Acustica united with Acustica, **2015**, vol.101(2), p.317-330. [hal-01259292](#)
- [J11] R. Auvray, **A. Ernoult**, B. Fabre, and P.Y. Lagrée, “*Time-domain simulation of flute-like instruments: Comparison of jet-drive and discrete-vortex models.*” The Journal of the Acoustical Society of America, **2014**, vol.136(1), p.389-400. [hal-01426971](#)

Research Reports

- [R1] **A. Ernoult** *Effect of air humidity and carbon dioxide in the sound propagation for the modeling of wind musical instruments.* RR-9500, Inria. 2023, pp.29. [hal-04008847](#)

Software

- [L1] “ **Optim-Z** ”, deposited at the french agency for the software protection (APP), 19/12/2019: IDDN.FR.001.520022.000.S.P.2019.000.31235. *Private software restricted for the internal use of the joined laboratory Liamfi (Buffet Crampon - LMA). Optimization of wind instruments geometry.*
- [L2] “ **OpenWIND 0.10**”, openwind.inria.fr, deposited at the french agency for software protection (APP) 03/2021: IDDN.FR.001.130008.001.S.P.2019.000.20600. *Open source software, GPL 3. Virtual workshop of instrument manufacture.*

Communication in scientific congress

with proceedings

- [C1] J. Cabaret, JP. Dalmont, **A. Ernoult**, V.Fréour, R.Viala “*Creation of an experimental database, for the validation of resonator models, comparison of geometries and materials, and quantification of measurement errors*”. Forum Acusticum 2023 - 10th Convention of the European Acoustics Association, Sep. **2023**, Turin, Italy. [hal-04356210](https://hal.archives-ouvertes.fr/hal-04356210)
- [C2] **A. Ernoult**, J. Cabaret, J. Chabassier. “*Openwind: a software to simulate wind instruments, as a tool for acoustic teachers*”. Forum Acusticum 2023 - 10th Convention of the European Acoustics Association, Sep. **2023**, Turin, Italy. [hal-04217988](https://hal.archives-ouvertes.fr/hal-04217988)
- [C3] T. Grothe, **A. Ernoult** “*How does a closed long chimney affect the sound of conical reed wind instruments?*”, DAGA - 48th German Annual Conference on Acoustics, March **2022**, Stuttgart, Germany. [hal-03789400](https://hal.archives-ouvertes.fr/hal-03789400)
- [C4] **A. Ernoult**, J. Chabassier “*Bore reconstruction of woodwind instruments using the full waveform inversion*”, e-Forum Acusticum, **Decembre 2020**, Lyon, France. [hal-02996142v1](https://hal.archives-ouvertes.fr/hal-02996142v1)
- [C5] J. Chabassier, **A. Ernoult**, O. Geber, A. Humeau, A. Thibault, R. Tournemenne, T. van Baarsel “*The virtual workshop OpenWIND: a Python toolbox assisting wind instrument makers*”, e-Forum Acusticum, **Decembre 2020**, Lyon, France. [hal-02984478v1](https://hal.archives-ouvertes.fr/hal-02984478v1)
- [C6] B. Fabre, P. de La Cuadra, **A. Ernoult**, “*How do flute players adapt their control to modifications of the flute bore ?.*”, International Symposium on Music Acoustics, September **2019**, Detmold, Germany. [hal-02428022](https://hal.archives-ouvertes.fr/hal-02428022)
- [C7] **A. Ernoult**, P. de La Cuadra, C. Balosso-Bardin, B. Fabre “*Influence of the musician’s position on the radiation impedance for transverse and notch flutes.*”, Acoustics '17 Boston, juin **2017**, Boston, USA. [hal-02428024](https://hal.archives-ouvertes.fr/hal-02428024)
- [C8] P. de La Cuadra, **A. Ernoult**, C. Balosso-Bardin, B. Fabre “*Playability in flute-like instruments: investigating the relation between flute making and instrumental control.*”, Acoustics '17 Boston, June **2017**, Boston, USA. [hal-02428025](https://hal.archives-ouvertes.fr/hal-02428025)
- [C9] **A. Ernoult**, A. Hajczack, B. Fabre, “*Évolution du contenu spectral du son au cours d’un transitoire d’attaque d’un instrument de type flûte.*”, Congrès Français d’Acoustique, **2016**, Le Mans, France. [hal-02428029](https://hal.archives-ouvertes.fr/hal-02428029)
- [C10] **A. Ernoult**, B. Fabre, “*Influence de la géométrie de la fenêtre des instruments de type flûte sur leurs résonances passives.*”, Congrès Français de Mécanique, **2015**, Lyon, France. [hal-02428031](https://hal.archives-ouvertes.fr/hal-02428031)
- [C11] **A. Ernoult**, B. Fabre, “*Écriture temporelle d’une source aéro-acoustique harmonique dans les instruments de type flûte.*”, Congrès Français de Mécanique, **2015**, Lyon, France. [hal-02428032](https://hal.archives-ouvertes.fr/hal-02428032)
- [C12] **A. Ernoult**, B. Fabre, S. Terrien and C. Vergez, “*Experimental study of attack transients in flute-like instruments*”, International Symposium on Musical Acoustics, **2014**, Le Mans, France. [hal-02428026](https://hal.archives-ouvertes.fr/hal-02428026)

Poster prize of innovative scientific research

without proceedings

- [C13] **A. Ernoult**, T. Grothe, “*Spectrum difference between the German Fagott and the French Basson*”, Vienna Talks 20/22, **2022**, Vienna, Austria.

- [C14] T. van Baarsel, C. Boust, J. Chabassier, **A. Ernoult**, M. Jossic, S. Kirsch, E. Lambert, R. Viala, “*Understand and predict acoustic properties of heritage instruments: the case of a Besson trumpet of the Musée de la Musique of Paris*”, Vienna Talks 20/22, **2022**, Vienna, Austria.
- [C15] E. Lambert, **A. Ernoult**, M. Jossic “*Synthèse Sonore des Instruments de Musique du Patrimoine*”, CAIRN - Journée d'échange: Tomographie et imagerie 3D pour les sciences du patrimoine, May **2022**, Paris, France.
- [C16] **A. Ernoult**, T. Grothe, “*Étude expérimentale de l'effet des longues cheminées sur le son des instruments à vent.*”, Congrès Français d'Acoustique, **2022**, Marseille, France.
- [C17] **A. Ernoult**, H. Boutin, J. Cabaret, J. Chabassier, T. Colinot, J.-P. Dalmont, J.-B. Doc, B. Fabre, S. Félix, V. Fréour, M. Pachebat, F. Silva, R. Viala, “*Étude comparative collaborative des modèles pour le calcul d'impédance d'instruments à vent.*”, Congrès Français d'Acoustique, **2022**, Marseille, France.
- [C18] **A. Ernoult**, T. Van Baarsel, C. Boust, J. Chabassier, M. Jossic, S. Kirsch, E. Lambert, R. Viala, “*Prédire les propriétés acoustiques des instruments du patrimoine: le cas d'une trompette Besson du Musée de la musique.*”, Congrès Français d'Acoustique, **2022**, Marseille, France.
- [C19] R. Viala, H. Boutin, J. Cabaret, T. Colinot, J.-P. Dalmont, J.-B. Doc, **A. Ernoult**, B. Fabre, V. Fréour, M. Pachebat, F. Silva, “*Mise en place d'une base de données expérimentales, pour la validation de modèles de résonateurs et la comparaison de géométries et matériaux.*”, Congrès Français d'Acoustique, **2022**, Marseille, France.
- [C20] J. Chabassier, **A. Ernoult**, O. Geber, A. Thibault, T. van Baarsel, “*OpenWind : une toolbox python au service de la recherche en acoustique musicale.*”, Congrès Français d'Acoustique, **2022**, Marseille, France.
- [C21] G. Castera, J. Chabassier, **A. Ernoult**, A. Thibault, R. Tournemene, “*The virtual workshop OpenWInD: Towards an optimal design tool of windinstruments for makers*”, International Symposium on Music Acoustics, **2019**, Detmold, Germany.
- [C22] **A. Ernoult**, S. Missoum, M. Jousserand, P. Guillemain, C. Vergez “*How to include several acoustic characteristics in the design of woodwind instruments?*”, International Symposium on Music Acoustics, **2019**, Detmold, Germany.
- [C23] P. de la Cuadra, **A. Ernoult**, B. Fabre “*Exploring dependency between instrument design and musician's control.*”, International Symposium on Music Acoustics, **2019**, Detmold, Germany.
- [C24] **A. Ernoult**, S. Missoum, M. Jousserand, P. Guillemain, C. Vergez, P. Sanchez “*Comment l'optimisation peut-elle être une aide à la facture instrumentale ?*”, Congrès Français d'Acoustique, **2018**, Le Havre, France.
- [C25] **A. Ernoult**, B. Fabre “*Who does control the attack transients of the recorder, the musician or the instrument maker?*”, International Symposium on Musical Acoustics, June **2017**, Montréal, Canada. [hal-02432795](#)
- Best poster presentation awards**
- [C26] C. Balosso-Bardin, **A. Ernoult**, P. de La Cuadra, I. Franciosi, B. Fabre “*Music or Mechanics? Understanding the role of a bagpiper's arm.*”, International Symposium on Musical Acoustics, June **2017**, Montréal, Canada. [hal-02432815](#)
- [C27] A. Ernoult, “*Comprendre le contrôle du sac de la cornemuse : étude du geste*”, Journées d'étude de la société française d'ethnomusicologie, June **2017**, Paris.
- [C28] C. Balosso-Bardin, P. de La Cuadra, **A. Ernoult**, B. Fabre “*The bagpiper's arm. Controlling the bag: a multidimensional study.*”, Conference on Musical Instruments, June **2017**, Edinburgh, UK.
- [C29] **A. Ernoult**, “*Transitoires d'attaques de flûtes à bec*”, Journées Jeunes Chercheurs en Acoustique, Audition et Signal, November **2016**, Paris.
- [C30] **A. Ernoult**, B. Fabre, “*Does an experienced recorder player start notes differently than a novice player?*”, Vienna Talk, **2015**, Vienna, Austria.

- [C31] **A. Ernoult**, B. Fabre, “*Modélisation de l’impédance de la fenêtre des instruments à embouchure de type flûte*”, Congrès Français d’Acoustique, **2016**, Le Mans.
- [C32] **A. Ernoult**, B. Fabre, “*Transitoires d’attaque de flûte à bec*”, Journées Jeunes Chercheurs en Audition, Acoustique musicale et Signal audio, **2016**, Paris.
- [C33] **A. Ernoult**, “*Étude expérimentale des transitoires d’attaque de la flûte à bec*”, Journées Jeunes Chercheurs en Audition, Acoustique musicale et Signal audio, July **2014**, Lyon.

Dissemination

- [D1] **J. Chabassier**, **A. Ernoult** “*Répliquer les caractéristiques sonores d’une trompette historique*”, large audience conference for the 20th anniversary of the Scrimé, June **2022**, Talence, France.
- [D2] **A. Ernoult** “*Simulate the sounding properties of historical trumpets*”, Unithé ou Café (internal seminar at Inria for all the staff), June **2022**, Talence, France. [Podcast in French](#)
- [D3] **C. Cecconi**, **A. Ernoult**, **M. Jossic** “*Synthèse Sonore des Instruments de Musique du Patrimoine*”, Atelier Culture - Inria, public conference on the collaborative projects between Inria and the French Ministry of Culture, March **2022**, Talence, France.
- [D4] **A. Humeau**, **J. Chabassier**, **A. Ernoult**, **A. Thibault** “*L’éloquence virtuelle des hautbois et bassons baroques*”, Colloque Articulations du Collegium Musicae, “Musiques anciennes, les instruments : hier, aujourd’hui, demain”, December **2019**, Boulogne-Billancourt, France.
- [D5] **A. Ernoult** “*Accélérer la conception d’un instrument à trous latéraux via l’optimisation acoustique*”, Journées Facture Instrumentale et Sciences, November **2018**, ITEM, Le Mans, France.
- [D6] **A. Ernoult** “*Des équations à l’instrument: les clarinettes logiques*”, Conférences “Grand Public” au conservatoire du Havre, Congrès Français d’Acoustique, April **2018**, Le Havre, France.
- [D7] **A. Ernoult** “*Contrôle de l’attaque dans les instruments de type flûte*”, Journées Facture Instrumentale et Sciences, April **2017**, ITEM, Le Mans, France.
- [D8] **R. Auvray**, **A. Ernoult**, **B. Fabre**, “*Les flûtes de Pan fonctionnent-elles comme les flûtes ouvertes?*”, Journées Facture Instrumentale et Sciences, **2013**, ITEM, Le Mans, France.

Seminar

- [S1] **A. Ernoult**, **T. Grothe** “*Bassoon and Basson, an acoustical comparison*”, ETI-Kolloquiums zur Musikalischen Akustik und Audiotechnik, 11th October **2021**, Hochschule für Musik, Detmold, Germany.
- [S2] **A. Ernoult** “*Modeling sound production in the recorder*”, ETI-Kolloquiums zur Musikalischen Akustik und Audiotechnik, 28th June **2021**, Hochschule für Musik, Detmold, Germany.
- [S3] **A. Ernoult** “*L’acoustique musicale, un soutien à la facture instrumentale ?*”, virtual seminar, 9th November **2020**, team LAM, institut d’Alembert, Sorbonne Université, Paris, France. <https://www.youtube.com/watch?v=oLSdJ3tmKLY&t=21s>
- [S4] **J. Chabassier**, **A. Ernoult**, **T. Thibault**, “*L’atelier virtuel OpenWIND : une boîte à outils Python à destination des facteurs d’instruments à vent*”, Research and Technology seminar of IRCAM, 22th January **2020**, Paris, France.
- [S5] **A. Ernoult** “*Les musiciens contrôlent-ils leurs instruments ? Le sac de la cornemuse et l’attaque de la flûte à bec...*”, young researcher seminar of the Laboratory of Mechanics and Acoustics, 12th December **2017**, Marseille, France.
- [S6] **A. Ernoult** “*Qui, du musicien ou du facteur, contrôle l’attaque d’une flûte à bec ?*”, Seminar of the department “Parole-Cognition” of Gipsa-Lab, 16th February **2017**, Grenoble, France.